

UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

Release of 'Ellagood' autumn olive

The Soil Conservation Service (SCS), United States Department of Agriculture, announces the release of 'Ellagood' autumn olive (*Elaeagnus umbellata* Thunb.). It was selected by the SCS Plant Materials Centers at Coffeeville, Mississippi, and Americus, Georgia, for wildlife food and cover, informal hedges, screens or barriers, and for windbreaks.

Ellagood is a vegetative increase from original vegetative material collected near Newtown Square, Pennsylvania, in 1967, by W. W. Steiner. It was tested as NJ-927 and PI-421132. Much original testing and selection was done at the New Jersey Plant Materials Center, but they decided not to pursue the formal release.

Ellagood is a spreading, upright, nonlegume, nitrogen-fixing deciduous shrub. Ellagood is unique from other varieties in that only vegetatively propagated plants yield abundant fruit crops. Although Ellagood must be vegetatively propagated, the abundant fruit crop ripens 30-60 days later than other varieties now available commercially. This attribute allows the fruit-ripening period to coincide more readily with the period when wildlife species actually need a fall/early winter source of food. Ellagood usually produces a more abundant crop and a larger fruit size than the Cardinal variety. Ellagood also retains its leaves later in the fall/early winter than the Cardinal

variety. Through extensive comparisons with the Cardinal variety, Ellagood has been rated as superior for fruit-ripening lateness, fruiting quantity and retention, and for leaf retention in fall. Ellagood has been rated as good as, or better than, Cardinal for vigor and plant survival.

The principal uses for Ellagood are wildlife food and cover, informal hedges, screens and barriers, and for windbreaks. It is adapted to plant hardiness zones 6, 7, and 8, and the northern portion of zone 9. In zone 9, it is adapted to northern Florida, along the Gulf Coast, and in southeast Texas. It is adapted to similar soils as the Cardinal variety, and like Cardinal, it does not perform well on poorly-drained soils, or on sites exposed to ocean salt spray and saline soil conditions.

A breeder block of plants is maintained by each of the following SCS Plant Materials Centers:

Cape May Courthouse, New Jersey

Coffeenville, Mississippi

Americus, Georgia

Knox City, Texas

Foundation plants will be provided to qualified nurseries from which plants may be produced vegetatively. Foundation plants will be available in the spring of 1986. Coordination of shipping and rooting of plants for distribution will be handled by the Americus Plant Materials Center, Route 6, Box 417, Morris Drive, Americus, Georgia 31703.

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SUPPORTING EVIDENCE FOR RELEASE DOCUMENT

'Ellagood' autumn olive

ORIGIN

Autumn olive, Elaeagnus umbellata (Thunb.) hardwood cuttings were collected from a single plant at 3522 Tyson Road, Newtown Square, Pennsylvania, by W. W. Steiner on March 14, 1967. The plant had been previously identified as a collection source by Mr. Steiner in the fall of 1966. Five cuttings were taken to the Cape May Plant Materials Center for rooting. Planting stock has been maintained at the Cape May PMC since the date of the original collection. The five cuttings were designated as NJ-927. Later, the collection was assigned as PI-421132.

The specific collection site was on private property owned at that time by the Ellagood family. Unfortunately, the collection became better known as Ellagood than NJ-927. Seed was collected from the original plant and designated as NY-3401 however, the genetic characteristics of abundant and late-ripening fruit proved not to be transmitted through seedlings.

Autumn olive is an introduced species to the United States. The original introduction of the species is traced to Climatic Zone III in the year 1840. Since that time, it has become naturalized to many of the eastern United States.

The Soil Conservation Service has collected more than 100 accessions of autumn olive. Most of these collections have been evaluated for specific purposes, usually fruit production. Ellagood is unique from other strains in that only vegetatively propagated plants yield abundant crops of fruit. Seedlings of the parent seldom produce more than sparse crops. No other accession of autumn olive has been observed to exhibit this genetic trait. This suggested that the origin of Ellagood is a clone. Ellagood is later maturing than Cardinal and other collections of autumn olive. This characteristic makes it more useful for planting where a late fall wildlife food source is needed.

### Description

'Ellagood' Elaeagnus umbellata Thunb. (autumn olive) is a spreading, upright, nonlegume, nitrogen-fixing shrub. It grows approximately 15 feet tall and may attain a width of 10-12 feet. The brown or yellowish-brown bark is smooth except on very old stems, where it is somewhat scaly. It is a deep tap-rooted plant. The small, alternate leaves vary in shape from narrow to moderately wide, with wavy edges. Leaf color is pale olive-green with a silvery cast; especially on the underside. Flowers are small, trumpet-shaped, pale-yellow; and abundantly scattered in clusters along the spurred twigs. The fruits contain one soft, ridged pit. Fruits vary from dull to bright red with small speckles. Abundant fruit production starts about four years after establishment of one-year-old plants.

The leaves on Ellagood have a more pronounced silvery hue to the underside and are slightly longer than the leaves on Cardinal. Ellagood also differs from Cardinal with respect to date of fruit maturity, size and quantity of fruit, leaf retention, and method of propagation.

Plant vigor and survival percentages have been as good or better for Ellagood as for Cardinal in nearly all plantings. Fruit maturity varied from 15 - 100 days later than Cardinal, dependent on year and geographic location. Most plantings of Ellagood were at least 30 - 60 days later in maturing than Cardinal. Leaf retention and fruit retention were also later and better for Ellagood than Cardinal at all sites.

At Cape May Court House, New Jersey, the fruit of Cardinal generally matures in late August to early September, while the fruit on Ellagood does not fully mature until early November. At Americus, Georgia, Cardinal matures in August, while Ellagood matures after October 15. In Coffeeville, Mississippi, Cardinal ripens in September, and Ellagood ripens after October 15. In north central Florida, Cardinal ripens in July; Ellagood in October - November. The fruit size on Ellagood is slightly larger and the color is a brighter red than that of Cardinal. The quantity of production exceeds other autumn olives. Fleshy fruit has been found on Ellagood as late as February, at Cape May Court House, New Jersey. At Americus, Georgia, Cardinal may be gone as early as September, but the fruit of Ellagood persists on the trees into January. In Mississippi, Cardinal may persist into October, and Ellagood persists into November, with some remaining on the trees as late as January.

Ellagood must be vegetatively propagated to retain its fruiting characteristics because fruiting habits of the seedlings are sparse and sporadic. Plants are readily started from hardwood cuttings.

### Conservation Uses

Autumn olive is used for a variety of purposes. This includes wildlife food and summer cover, screens, barriers, informal hedges, and windbreaks. The wildlife food value of Ellagood is enhanced by the late maturing fruit. Fruit is eaten by four species of upland game birds, two migratory game birds, 20 nongame birds, and four mammals. The accession is browsed by deer and barked by cottontail rabbits and meadow mice. It gives good nesting sites for birds. Leaf retention into early winter makes the plant useful for screens, hedges, and windbreaks. It is an attractive ornamental, having fragrant bloom, and edible, but astringent, red fruit. The abundant leaf production and low growing canopy enhance its value as a windbreak, screen, or barrier conservation plant.

### Area of Adaptation

Plantings of Ellagood made in NY, PA, VA, NJ, MD, WV, TN, NH, CT, DE, NC, KY, MO, FL, GA, TX, and MS, rather clearly identify its area of climatic adaptation. This is plant-hardiness zone 6, which is -10 to 0 degrees F. Plantings in areas colder than this should be avoided. There is evidence of adaptation as far south as north central Florida. Going westward, it has performed well as far west as central Oklahoma and Texas, but some dry sites west of this area have not performed well, due to inherent low total rainfall.

Ellagood appears to have the same site adaptation characteristics as Cardinal. It performs well in moist soils except poorly drained ones and is tolerant of various soil textures. Like Cardinal, it has good adaptation to sites with low moisture-holding capacity.

Ellagood is not adapted to sites exposed to ocean spray or salt conditions in the soil.

#### Ellagood Adaptation by MLRA

1	112	126	148
2	113 (south part)	127 (south part)	149A
3	114	128	149B
4	115 (south part)	129	150A
5	116A	130	150B
76 (south part)	116B	131	151
80A	117	133A	152A
80B	118	133B	152B
84A	119	134	153A
84B	120	135	153B
84C	121	136	153C
85	122	137	154
86	123	138	155 north part)
87	124	147	

#### With extra moisture only

78  
79  
81  
82

#### Methods of Varietal Maintenance

Because Ellagood will not be produced as a certified crop, no varietal standards are needed. However, since it is necessary to propagate it by vegetative means to realize its principal value, growers will be expected to

maintain plants for the purpose of producing cuttings for commercial production. Rooted plants will be provided growers for the purpose of establishing a production block to obtain cuttings.

#### COMMERCIAL PRODUCTION IN THE FIELD

Because of the inability of Ellagood autumn olive to transmit its superior characteristics through seedlings, it must be propagated vegetatively.

It is relatively easy to propagate from hardwood cuttings. The cuttings can be rooted in the greenhouse or the field. Since the success rate has been about 90% for field production, this method is recommended.

One-year-old wood should be used for making cuttings. When Ellagood is pruned severely, it produces an abundance of new shoots. Dormant hardwood cuttings are taken in February or early March. The ideal cutting diameter is about  $\frac{1}{2}$  inch, but should not be less than  $\frac{3}{8}$  inch. The whips should be stored in a "cold room" to maintain dormancy until planting.

A raised bed is prepared in a sandy loam, well-drained soil. The bed height should be four to six inches above field elevation. This facilitates drainage and cultural operations while clearly outlining the planted area.

Prepared cuttings should be about eight inches long. The basal end of the prepared cutting should be treated with a growth hormone, i.e., rootone 10. The treated cutting is inserted in the raised bed to a depth of four inches on a spacing of four by six inches. Plantings and cuttings deeper than four

inches results in digging problems while more shallow planting inhibits or delays root growth. The planted area should be lightly mulched to reduce evaporation. An irrigation source is needed to maintain moisture for rapid rooting and to promote early growth. The planting is about April 1, in New Jersey.

Cuttings which remain in the bed for one year are large enough for field planting. The plants develop a good root system, several nicely formed branches and are about two feet tall after one year in the field. For potted plants, the rooted cuttings can be dug and potted after a satisfactory root system has developed.

#### COMMERCIAL PRODUCTION IN A GREENHOUSE

Greenhouse propagation of Autumn Olive, cultivar 'Ellagood,' during 1985. Submitted by the NPMC, at Beltsville, Maryland.

Cuttings were taken from established plants at the Cape May, New Jersey Plant Materials Center, in July of 1985. Cutting material consisted of semi-hardwood material, up to 1/8 inches in diameter. The material was placed into clear, plastic bags after cutting and transported to the NPMC, where material was stored in a cool, dark area for approximately three days.

Material was trimmed to lengths of 6-8 inches and dipped in roottone F. The cuttings were then inserted into washed sand, with bottom heat under mist to a depth of two inches.

Cuttings were placed at spacings of 1-2 inches to maximize leaf canopy and reduce evapotranspiration. Mist interval was regulated, via an "electronic leaf." Greenhouse temperatures ranged from 65° Fahrenheit, at night, to 95° during the daylight hours. The cutting bench is under 75 percent shade.

Rooting was evident within two weeks and was sufficient for transplanting within 4-6 weeks. Ninety percent of the cuttings were successfully rooted. Rooted material was subsequently transplanted into one-gallon plastic containers containing "Pro-mix" artificial soil mix. Plants were grown under glass for one month and then moved to cold frames covered with lath (50 percent shade). Plants will be available for shipping this spring.

DISEASE AND INSECT PROBLEMS

In general, autumn olive is relatively free of pests. However, as with most plants, epidemic outbreaks of a disease, or insects, that attack autumn olive would likely affect Ellagood too.

Cardinal and Ellagood have been planted in more than ten states at more than 25 sites. Evaluations have been recorded for some locations for six or more years. The intensity of insect and disease injury has been about equal for both accessions.

Insect damage was seldom observed, and then only slight damage was recorded. The insects were not identified; however, Japanese beetle has been noted on plants growing on the Plant Materials Center.

However, as the plants become older, there is some dieback of small and large branches. This is also experienced in Cardinal and other autumn olives. The organism, or the relationship between the dieback and environmental condition, has not been identified. In the most severe cases, which seem to be related to a high fertility and moisture level', as much as 25 percent of the plant may be affected. Disease injury was recorded for less than 25 percent of the evaluations.

Concerns About the Spreading Potential of Autumn Olive

There have been documented cases of autumn olive spreading into unmanaged/poorly-managed pasturelands from mined land and wildlife plantings in West Virginia and Ohio. All known plantings of Ellagood and Cardinal were checked, in the SNIC area in 1985, and there is no documented spread, vegetatively or by seed, of the Ellagood variety. Since Ellagood seedlings do not produce fruit well, this should also limit its spread potential. There is some documentation of the spread by seed of the Cardinal variety on six planting sites in Arkansas, but no documented spread off of the planting sites.

Respondents were from FL, AL, GA, MS, AR, LA, TX, NC, KY, and TN.